

FACTORS INFLUENCING THE PURCHASING DECISION AND CONSTRAINTS INVOLVED IN CONSUMPTION OF KHOA

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Abstract: Khoa, an important indigenous/traditional dairy product has economic, commercial and dietary importance to Indian people as it is the base product for many milk sweets which are considered to be integral part of Indian food heritage. Due to the ever growing demand for Khoa, the present study was undertaken to analyse the consumer perception on quality attributes of Khoa and their influence on purchasing decision. A total sample of 650 dairy product consumers were selected through simple random sampling technique and questioned with well-structured and pre tested interview schedule. The results indicated that the variables like family size, educational status of the head of the household, monthly family income and presence of children in the family were found to be positively influencing the Khoa consumption whereas, food habit of the family was found to be negatively influencing the Khoa consumption. The constraint analysis revealed that not available in preferred quantity was considered as first and foremost constraint faced by consumers in consumption of khoa followed by less availability. This concluded that the consumers' skewed their interest towards quality attributes of Khoa which may vary in different segments of population. Thus, it is necessary to conduct frequent consumption analysis study to assess the consumer preference, therein to help the producers in production of products according to consumer need and make sure that of its reachable in order to maximize the profit.

Keywords: Khoa, Factors, Purchase decision, Constraints, Urban Consumers.

INTRODUCTION

Khoa is an important indigenous dairy product in India which forms the base and filler for variety of milk confections such as peda, burfi, gulab jamun, halva etc (Kumar, 2013; Kavita et al. 2015). Khoa is a rich source of energy, about 458 Kcal per100 g of the product. The food and nutritive value of khoa is very high. According to Prevention of Food Adulteration Act, as amended up to March 2006, khoa is the product obtained from cow or buffalo (goat or sheep) milk, or a combination thereof by rapid drying containing milk fat content not less than 30 per cent on dry weight basis of the final product (Reddy, 2007). It contains large quantities of muscle building proteins, bone forming minerals, and energy giving fat and lactose. It is also expected to retain most of the fat soluble vitamins A and D, and also fairly large quantities of water soluble B vitamins contained in the original milk. Depending on the

end use and the quality of milk used, mainly three commercial types of khoa are identified, namely, Pindi, Dhap, and Danedar which differs in composition, texture and quality (IS 4883, 1980; Sawhney et al, 1984). Khoa has considerable economic and dietary importance to Indian population. It forms an important base for preparation of milk sweets which are an integral part of Indian food heritage. The khoa and khoa based sweets have high commercial significance because of their popularity throughout the country and longer shelf life. Generally, buffalo milk is preferred for the manufacture of khoa as it has larger proportion of butyric acid-containing triglycerides, and there is more release of free fat responsible for smooth and mellow texture which are desirable attributes in khoa (Sindhu, 1996). Khoa made from cow milk lacks these characteristics and has moist surface, salty taste and sticky and sandy texture which are considered undesirable for the preparation of sweetmeats (Minz and Singh, 2016). Rajarajan et al. (2006) studied the effect of antifungal agents on keeping quality of khoa. FSSR (2011) Definition of khoa (As amended in 2018) Khoa by whatever name it is sold such as Khoa or Mawa or any other region specific popular name means the product obtained by partial removal of water from any variant of milk with or without added milk solids by heating under controlled conditions and preparation is completed in about 15-20 Minutes (Khamrui, 2020).

The consumption of traditional dairy products is growing at an annual growth rate of more than 20%, but for the western dairy products the growth rates are relatively much lower (5-10%) (Patil, 2009). The market size of ethnic milk products (include khoa based sweets) in India alone is estimated at more than 1000 billion INR with an annual growth estimated at 50 billion INR (Aggarwal, 2007). Lower levels of fat result in undesirable hard body and coarse texture (De, 1980). Many researchers have attempted to analyze the economics of milk production in India (Karmakar and Banerjee, 2006; Reddy et al., 2004) but the study conducted by Rao et al 2020 analysed the economics of mechanized production of Khoa. In India the research conducted on this product are primarily concerned with its production methods, energy requirements during its manufacture, shelf life and its storage, chemical composition, microbiological quality, physico-chemical, and biochemical changes. But fewer studies was carried out in related to quality attributes. Due to the ever growing demand for Khoa, the present study was undertaken to study the factors influencing purchase decision of khoa and constraints in khoa consumption.

METHODOLOGY:

For this research work, 650 dairy product urban consumers were selected by a simple random sampling procedure for the study. The choice of place for the study is Chennai city. A survey method was adopted during 2020-2021 for the collection of primary data from consumers with the help of well-structured and pre tested interview schedule. The interview schedule had the demographic and socioeconomic details of the household consumers, factors influencing the consumption and its influence on purchase decision. The data collected from household consumers were tabulated and analyzed. The tools used for the analysis of the data are presented and discussed below.

Functional analysis:

In order to assess the interrelationships between consumption of khoa and the socio-demographic factors, as described by Rani *et al.* (1999), Semi-log function was fitted. The functional form was as below:

$$\ln Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \beta_9 X_9 + \beta_{10} X_{10} + \mu$$

Where,

Y = Quantity of khoa consumed per household per month (in Kgs)

X₁ = Family size in consumption units

X₂ = Age of the head of the household - continuous

X₃ = Educational status of the head of the household (0 – If illiterate; 1 – If primary; 2 – If secondary; and 3 – If College)

X₄ = Family income in Rupees

X₅ = Dummy - Hindu religion (1 – If the household is a Hindu; 0 – otherwise)

X₆ = Dummy - Christian religion (1 - If the household is a Christian; 0 – otherwise)

X₇ = Dummy – Presence of Child in the family (1 – If a family had a child (ren) below 14 years; 0 – otherwise)

X₈ = Dummy – Presence of Aged person (1 - If household with aged person(s) above 60 years; 0 – otherwise)

X₉ = Dummy - Food habit of the family (1 - If non – vegetarian; 0 – otherwise)

X₁₀ = Dummy - Type of family (1 – If nuclear; 0 – joint)

α = Intercept

β_i = Regression coefficients to be estimated

μ = stochastic disturbance term

Garret's Ranking Technique:

Garret's ranking technique was adopted to rank the constraints faced by urban consumers in the study area. A list of constraints was given to the consumers to rank it (1 to 10). The order of merit given by the respondents was converted into ranks (Garret and Woodworth, 1971).

$$\text{Percent position} = (100(R_{ij} - 0.50))/N_j$$

Where, R_{ij} = Rank given for i th factor by j th individual

N_j = Number of factors ranked by j th individual.

The percent position of each rank thus obtained was converted into scores by referring to table given by Garret. For each reason, the scores of the individual respondents were added together and divided by the total number of respondents for whom scores were given and thus based on the mean scores, the ranks were given. These mean scores for all the reasons were arranged in descending order and the most important reason for the preference of dairy products was ranked first and the least important reason was ranked as the last.

RESULTS AND DISCUSSION

Factors influencing the consumption of Khoa

In order to examine whether the differences in consumption pattern of Khoa could be attributed to variations in the socio-economic factors such as family size, religion, age of the household head, education, income level, presence of aged person, type of family and food habit, a separate semi-log regression function was fitted. The semi-log functional model showed a good fit with the adjusted R^2 of 0.698, indicating that 69.80 per cent of variation in the dependent variable was explained by the independent variables incorporated. The ANOVA also exhibited that the model had a good fit with a significant 'F' value of 25.592 (Table 2). Of the variables used to explain the variation in the consumption of Khoa in Chennai city, family size, monthly family income, food habit of the family and presence of children in the family were found to be significantly influencing the consumption of Khoa. Of which, family size, educational status of the head of the household, monthly family income and presence of children in the family were found to be positively influencing the Khoa consumption whereas, food habit of the family was found to be negatively influencing the Khoa consumption.

The results indicated that a unit change in the family size could alter the monthly household consumption of Khoa by 11.10 per cent, from its mean level, *ceteris paribus*. The monthly family income positively influenced the consumption of Khoa by 73.40 per cent from the mean level. The per cent variation in the household Khoa consumption as a result of having a

child in the family was estimated to be 64.20, *ceteris paribus*. The consumption of Khoa was increased by 26.40 per cent when the sample households are vegetarians over their non-vegetarian counterparts, *ceteris paribus*.

Table 1: Factors influencing the consumption of Khoa in Chennai city

Explanatory factors		Explained variables
		Khoa
Constant		5.803** (0.404)
X ₁	Family size	0.111* (0.050)
X ₂	Age of the household head	0.004 (0.093)
X ₃	Educational status of the household head	0.029 (0.055)
X ₄	Family income	0.734** (0.141)
X ₅	Hindu - dummy	0.074 (0.114)
X ₆	Christian - dummy	-0.043 (0.104)
X ₇	Children in the family - dummy	0.642** (0.171)
X ₈	Aged persons in the family - dummy	0.156 (0.162)
X ₉	Food habit of the family - dummy	-0.264* (0.125)
X ₁₀	Type of the family – dummy	0.033 (0.235)
R ²		0.726
Adjusted R ²		0.698
'F' value		25.592**

Constraints involved in consumption of Khoa:

The ranks for the constraint involved in consumption of Khoa were collected from the sample household consumers; scores were calculated and compared for their order of importance. Based on the total scores obtained for each constraint, they were ranked and the results are presented in Table 1. The results revealed that not available in preferred quantity was considered as first and foremost constraint faced by consumers in consumption of khoa followed by less availability. This might be due to that consumer preferred in various quantities as per family size as well as prefer specific outlets. In the study conducted by Abinaya and Santhi, (2018) revealed that easy accesses' as the prime consideration for

selecting the particular store to purchase dairy products. The other major constraints faced by consumers in consumption of khoa was in the order of poor packaging, Comparably expensive, highly perishable/ low shelf life and poor quality.

Table 2: Constraints involved in the consumption of Khoa

S. No	Constraints	Score	Rank
1	High perishability / low shelf life	896	V
2	Expensive (Comparably)	897	IV
3	Poor quality	806	VI
4	Less Availability	965	II
5	Slow digestion	798	VII
6	Not liked	697	IX
7	Not suitable for health	722	VIII
8	Not available in preferred quantity	989	I
9	Poor packaging	913	III
10	Poor taste	686	X

Conclusion

The present study to find out the consumers' perception on quality attributes and their influence on purchasing decision indicated that the variables like family size, educational status of the head of the household, monthly family income and presence of children in the family were found to be positively influencing the Khoa consumption whereas, food habit of the family was found to be negatively influencing the Khoa consumption. The factor analysis results pointed out that 'sensory or intrinsic' factors was the major factor (Eigen value: 8.410) followed by 'safety and economic factors (Eigen value: 1.551) which primarily determined the preferences of consumers' for quality attributes for khoa. The Ordered probit results revealed that the estimated coefficients for the variable, family size was statistically significant at one per cent level in taste, colour, price, nutrition value and value for money whereas the variables, educational level of household head and family income were statistically significant at one per cent level in all the quality attributes of Khoa. The constraint analysis revealed that not available in preferred quantity was considered as first and foremost constraint faced by consumers in consumption of khoa followed by less availability. This concluded that the consumers' skewed their interest towards quality attributes of Khoa which may vary in different segments of population. Thus, it is necessary

to conduct frequent consumption analysis study to assess the consumer preference, therein to help the producers in production of products according to consumer need and make sure that of its reachable in order to maximize the profit.

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